

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

91 (currently amended). A method for modifying an image having pixels, comprising the steps of:

automatically identifying a main subject of the image, and

automatically altering pixel values of said image to emphasize said main subject, said altering following said identifying;

wherein said steps are without manual intervention and said altering follows any and all identifying of said main subject.

92 (cancelled).

93 (currently amended). The method of Claim 92 91 wherein said identifying further comprises:

segmenting said image into regions; and

generating a main subject belief map of said regions.

94 (previously presented). The method of Claim 91 wherein said altering pixel values further comprises altering pixel color saturation.

95 (previously presented). The method of Claim 91 wherein said altering pixel values further comprises altering pixel hue.

96 (previously presented). The method of Claim 91 wherein said altering pixel values further comprises altering pixel luminescence.

97 (previously presented). The method of Claim 91 wherein said altering pixel values further comprises altering pixel blur.

98 (previously presented). The method of Claim 91 wherein said altering emphasizes said main subject by altering pixel values that are a part of said main subject.

99 (previously presented). The method of Claim 91 wherein said altering emphasizes said main subject by altering pixel values that are not a part of said main subject.

100 (cancelled).

101 (currently amended). The method of Claim ~~100~~ 99 wherein said ~~desaturating~~ altering further comprises:

calculating the luminance values for the pixels that are not a part of said main subject, and

replacing the color values of the pixels that are not a part of said main subject with respective luminance values.

102 (previously presented). The method of Claim 91 wherein said altering further comprises enhancing saturation of the pixels that are a part of said main subject.

103 (previously presented). The method of Claim 91 wherein said altering further comprises inverting the pixel hue values of the pixels that are a part of said main subject.

104 (previously presented). The method of Claim 91 wherein said altering further comprises inverting the pixel hue values of the pixels that are not a part of said main subject.

105 (previously presented). The method of Claim 91 wherein said identifying further comprises the steps of:

segmenting the image into a plurality of regions based on uniform image characteristics;

calculating a level of saliency for said plurality of regions, and

assigning a believe value to the pixels corresponding to said level of saliency.

106 (currently amended). A system for modifying an image having pixels, comprising the steps of:

means for automatically identifying a main subject of the image,
and

means for automatically altering pixel values of said image to emphasize said main subject, said altering following said identifying; said altering following any and all identifying of said main subject.

107-120 (cancelled).

121 (currently amended). A method of modifying an image having pixels, comprising the steps of:

automatically generating one or more belief values, each said belief value being associated with one of a plurality of regions of the image, said belief values each being related to the probability that the associated region is a main subject of the image;

following said generating, automatically altering pixel values in said plurality of regions of said image, in accordance with said associated belief values;

wherein said steps are without manual intervention and said altering follows all said generating.

122 (previously presented). The method of Claim 121 wherein said altering further comprises:

determining a saturation value for each pixel; and
altering the pixel saturation values according to said associated belief values.

123 (previously presented). The method of Claim 121 wherein said altering further comprises:

determining a luminance value for each pixel; and

altering the pixel luminance values according to said associated belief values.

124 (previously presented). The method of Claim 121 wherein said altering further comprises:

determining a hue value for each pixel, and
altering the pixel hue values according to said associated belief values.

125 (previously presented). The method of Claim 121 wherein said altering further comprises:

determining a blur value for each pixel, and
altering the pixel blur values according to said associated belief values.

126-152 (cancelled).

153 (new). The method of Claim 91 wherein said main subject includes skin tone pixels.

154 (new). The method of claim 93 wherein said segmenting further comprises extracting features of said input digital image and said generating further comprises using a reasoning engine to compute said belief map from said features.

155 (new). The method of claim 154 wherein said reasoning engine is Bayes net-based.

156 (new). The method of claim 154 wherein said features include semantic features and structural features, said semantic features including skin, said structural features including centrality.

157 (new). A digital image modification method for use on an input digital image to produce an output image, the method comprising the steps of:

receiving a user selection of one of a plurality of different types of emphasizing to provide a selected emphasis;

identifying a main subject and a background in the input digital image;

altering pixel values of said input digital image, in accordance with said selected emphasis, to provide the output image wherein said main subject is emphasized;

wherein said identifying and altering steps are without manual intervention.

158 (new). The method of claim 157 further comprising delivering said output image to an output device.

159 (new). The method of claim 158 wherein said output device is a printer or a display.

160 (new). The method of Claim 157 wherein said main subject includes skin tone pixels.

161 (new). The method of claim 157 wherein said types of emphasizing include one or more of: altering pixel color saturation, altering pixel hue, altering pixel luminescence, and altering pixel blur of one of said main subject and said background.

162 (new). The method of claim 161 wherein said emphasizing alters said main subject.

163 (new). The method of claim 161 wherein said emphasizing alters said background.

164 (new). A digital image modification method for use on an input digital image in a computer system to produce an output image, the method comprising the steps of:

segmenting the input digital image into a plurality of regions, said regions each being homogeneous;

computing a main subject belief map of said regions, said map defining a main subject in said input digital image;

then, altering pixel values in said input digital image, in accordance with said map, to provide the output image wherein said main subject is emphasized; and

next, delivering said output image to an output device;

wherein said steps are without manual intervention.

165 (new). The method of claim 164 wherein said output device is a printer or a display.

166 (new). The method of claim 164 wherein said computing of said map is based upon degree of centrality, borderiness, and chrominance space distribution.

167 (new). The method of claim 164 wherein said altering further comprises modifying pixel values of said input digital image exclusive of said main subject.

168 (new). The method of claim 164 wherein said main subject includes skin tone pixels.

169 (new). The method of claim 164 wherein said computing further comprises:

calculating a level of saliency of each of said regions; and

assigning a belief value to each of said pixels corresponding to the level of saliency of the respective said region.

170 (new). The method of claim 169 wherein said calculating further comprises considering a plurality of semantic features including skin regions and a plurality of structural features including centrality.

171 (new). The method of claim 170 wherein said main subject has a high degree of said centrality.

172 (new). The method of claim 170 wherein said main subject includes skin tone pixels.